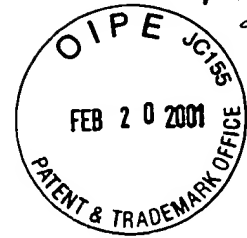


IN THE PATENT AND TM OFFICE

Appn. Number: 09/396,128 Art Unit: 3635
Filing Date: 09/14/99
Applicant: Thompson, Thomas C.
Appn. Title: Hurricane-Earthquake Frieze Plate
Examiner: Tran, Hanh V.



Mailed February 16, 2001

AMENDMENT A

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Sir:

In response to the Office Action mailed 12/04/00, I have included in this response the following:

1. Corrected figure 3 and figure 6A of the drawings.
2. Request for changes in specification.
3. Argument against claim rejections under 35 U.S.C. § 112.
4. Argument against claim rejections under 35 U.S.C. § 102.
5. Argument against claim rejections under 35 U.S.C. § 103.
6. Amended claims.
7. Certificate of Mailing.

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FEB 26 2001

TO 3600 MAIL ROOM

Very respectfully,

A handwritten signature in cursive script that reads "Thomas C. Thompson".

Thomas C. Thompson



RESPONSE

1. **Drawings.** a. The applicant has enclosed a copy of figure 6A of the drawings, which is a side view of the sliding runners. The draftsman for the applicant inadvertently put it at the top of figure 7 as a perspective view.

b. The office action refers to claim 7- "attachment to roof sheathing" must be shown or canceled. The applicant's fig. 3 shows the sheathing C in the far right hand side of the drawing. The specification (page 14, line 16) states "This view (fig. 3) also has the roof sheathing C cut away to show how the carriage bolt 12 ties the sheathing C to the rafter B and indirectly to the top plate A."

c. The applicant has submitted a corrected figure 3, that more clearly shows how the sheathing is held down while still cutting away the sheathing to view the connector below. The added lines are shown in red. No new material has been added to the invention.
2. **Specifications** The applicant noticed two errors in the specifications. In the Reference Numbers for drawings, please amend the following:

Page 11, Line 10. Change 10.Ventilation "tab" to Ventilation --rib--.

The applicant also noticed during the prosecution that the wall tab 3 is mis-named. In the applicant's figures 1-4, the examiner can see that the wall tab 3, is not really a tab at all, but is an extension of the lower part of the long dimension of the front face 2. So as to make the claims correct, and so that this wide horizontal extension is not confused with the thin vertical tabs 72 of Jonett's '577, the applicant respectfully requests that the wall tab 3 be changed to lower face 3.

Page 11, Line 3. Change "Wall tab" 3 to --Lower face-- 3.

There are numerous places in the specification including pages 12, 14, 15, 20, 21, and 22 that the applicant requests to change wall tab 3 to lower face 3.
3. **Claim rejections-35 U.S.C. §112** The applicant agrees with the examiner that several of the claims can be improved, and has followed each of the examiner's recommendations.

On page 3 of the office action, line 8 states "Claim 7, line 1, 'said sheathing tabs' lacks antecedent basis." "Said sheathing tabs" are found in claim 1c. The applicant has amended the claims to distinctly claim the invention. The applicant respectfully requests that the examiner consider the amended claims which distinctly claim the present invention.

4. **Claim rejections-35U.S.C. §102 re Jonett 5,370,577.** The applicant has amended the claims to clear 112, 102, and 103 rejections.
 - a. On claim 1, the applicant has amended the claim, so that the examiner can clearly see how the claim distinguishes over the cited reference. The applicant has narrowed claim 1 by adding that the important, lower side of the rectangular front face extends down. Claim 1g distinguishes the claimed invention over Jonett's '577, by claiming the novel, lower extended bottom of the rectangular face. Jonett uses two thin, weak strips on either side of his main plate, but nothing on his main plate extends down. The applicant has used the underscore and bracketing technique to amend the claims, and no new material has been added.
 - b. The applicant's fig. 1 shows that the entire lower section 3 of the face plate 2 extends below the left plate tab 6 and right plate tab 7. The applicant's fig. 2 shows that when mounted on a building, the left plate tab 6 and right plate tab 7 are attached to a top plate. This allows the entire extended lower section 3 to spread horizontally over the outside wall sheathing. This novel physical feature is claimed on applicant's new claim 1g.
 - c. Jonett's fig. 2 shows a thin tab 72 that extends at an angle under the rafters. This thin vertical tab would be hard to nail under a rafter and has minimal holding power compared to the broad, horizontal lower section 3 of the applicant's invention. Jonett assumes that the stud will be under the rafter, but in many cases, the studs can be 16 inches-on-center, and the rafters can be 24 inches-on-center.
 - d. The applicant's sheathing tabs 8 and 9 have mounting holes for attachment to the roof sheathing. Although the claims describing the applicant's sheathing tabs have been restricted, Jonett has no sheathing tabs on his invention and nothing that could possibly tie into the roof sheathing.
 - e. The applicant's fig 1 shows ventilation ribs 10 that add ventilation and strength to the

front face 2. The ribs work-harden the metal adding strength. This novel physical feature is claimed in applicant's amended claim 3. Jonett shows a bunch of weakening ventilation holes 24 on the face of his apparatus.

- f. The applicant's fig. 3 shows how the sheathing tab 8, left rafter tab 4, and left plate tab 6 form a strong I-beam shape (in cross-section) against the rafter. This novel physical feature is claimed in applicant's amended claim 7.
- g. Jonett's fig. 4 shows his tabs 60, 32, and 46 forming a Z-shape on a rafter. The adjacent apparatus also has the tabs 60', 32', and 46' on the same rafter, with tabs 46 on top of 46'. This causes a problem with putting roof sheathing on top of two stacked tabs on top of the rafter.
- h. Putting Jonett's tabs 46 and 46' on top of the rafter causes other problems, especially with the angle α shown on the top of the rafter in Jonett's fig. 5. Jonett uses an operator in the field to bend the tabs 46 and 46' to the same slope as the roof. The applicant has found that if something has to be bent in the field, it will invariably be bent wrong. This would waste time and energy.
- i. With all the problems the applicant has shown for Jonett's apparatus, it is no wonder that he did not include a flat pattern layout in his patent.
- j. Besides being physically different and vastly superior to Jonett's apparatus, the applicant's amended claims clear all 102 and 103 objections. Since Jonett's apparatus was not designed for easy and quick installation or patented to be factory formed from thick, strong steel, it can hardly be compared to the applicant's hurricane-earthquake frieze plate. In order to be field-bent, Jonett's apparatus has to be made from thin, bendable material, and therefore weaker than the applicant's strong connector. Jonett's apparatus wastes more material during manufacture, because of the long thin arms 72 sticking down. Jonett's apparatus also cannot be used to tie into sheathing because there are no sheathing tabs that could tie into the sheathing.
- k. The results achieved by the present invention are new, unexpected, superior, and unsuggested. Prior to the applicant's frieze plate, no one had successfully tied adjacent rafters together and to the top plate, outside sheathing, and roof sheathing; or formed an I-beam section next to a rafter. During a hurricane or earthquake, the present invention will

help hold the roof to the walls, and turn the outside wall into a strong shear wall.

- l. The problem solved by the invention was recognized, but never remedied. Previously, engineers and inventors designed hurricane ties against uplift of a rafter, and to be hidden under sheathing or wall board. That is why prior art hurricane ties were patterned after thin angle iron. Ongoing studies of wind forces on buildings show that wind and pressure subject a home to forces from several directions at once. Positive pressure on one side of a building and negative pressure on the other. Uplift pressure on one side of a building and down-force on the other. In the Tropics, where hurricanes are common, engineers never designed for snow load, but there can be tremendous down-loading forces on a building during strong winds. The present invention helps deflect these forces by providing a strong connection between adjacent rafters, top plate, roof sheathing, and outside wall sheathing. The solving of an ongoing problem militates in favor of patentability.
- m. Sheet metal connectors are not commercially accepted unless they are demonstrably superior to toe-nailing and are cheaper, stronger, and easier to install than previous sheet metal connectors. The applicant's invention is demonstrably superior to toe-nailing; and stronger, cheaper, and quicker to install than previous metal connectors that had to be bent around structural members or formed by bending thin metal at the job site using a brake and/or clamps like Jonett (column 5, line 17).
- n. For all the reasons given previously, applicant respectfully submits that the amended claims comply with Section 112. The amended claims cite novel features that define over the cited reference under Sections 102 and 103 because the present invention and cited reference have been shown to be completely different in layout, form, strength, installation, operation, and usefulness. Important differences in the applicant's drawings and specification have been inserted in the claims. The claimed distinctions are of patentable merit under Sections 102 and 103 because of the novel and unobvious structure, the fact that it hasn't been previously implemented, and the tremendous results provided for a contractor and homeowner. Since the amended claims define distinctive structure that produces new and unexpected results as described above, applicant submits that such claims are clearly patentable.

5. **Claim rejections-35U.S.C. §102 re Gilb 5,236,273.** The applicant has amended the claims to clear all 112, 102, and 103 rejections. No new material has been added.
- a. Claim 1b distinguishes the claimed invention over Gilb's '273, by claiming the novel, right angled bends on the top and side of the front face 2. Gilb uses a 60° bend on top of his base member 27, and 26° to 45° bends on the side. Therefore, the applicant's claim 1b claims novel physical features not shown in the cited reference.
 - b. Claim 1c distinguishes the claimed invention over Gilb, by claiming the novel sheathing tabs 8 and 9, formed by 90° bends on top of the face plate 2. Gilb shows no sheathing tabs and nothing that can connect to the sheathing. Therefore, the applicant's claim 1c claims novel physical features not shown in the cited reference.
 - c. Claim 1d distinguishes the claimed invention over Gilb, by claiming that the rafter tabs 4 and 5 are formed out from the sides of the front face 2, by 90° bends. Gilb's rafter flanges 35 and 36 are formed up from the sides of his seat member 34, which is on top of his base member 27. Therefore, the applicant's claim 1d claims novel physical features not shown in the cited reference.
 - d. The applicant has narrowed and amended the claim to distinguish over the cited reference. The applicant has narrowed claim 1e by showing how the lower right angled bends of the applicant's invention are on the bottom of the rafter tabs; these lower bends form the important plate tabs 6 and 7. Gilb forms equivalent plate tabs 30 and 33 by bends on top of his wing member 29 and 32. Therefore, the applicant's amended claim 1e claims novel physical features not shown in the cited reference.
 - e. The applicant has narrowed claim 1g by showing how the lower edge of the front face extends down to cover sheathing and underlying top plate. Although Gilb's base member 27 does show a slight lower extension, it can hardly be called rectangular. Therefore, the applicant's amended claim 1g claims novel physical features not shown in the cited reference.
 - f. On the applicant's claim 2, the rectangular face spaces apart adjacent rafters. Gilb's apparatus does not space apart rafters. Therefore, the applicant's amended claim 2 claims novel physical features not shown in the cited reference.
 - g. On the applicant's claim 3, the front face has ventilation ribs for strength and ventilation.

Gilb has no such novel features. Therefore, the applicant's amended claim 3 claims novel physical features not shown in the cited reference.

- h. The applicant's claim 7 claims a novel I-beam shape against each side of a rafter. Gilb's apparatus appears to form a sort of U-shape under the rafter. Therefore, the applicant's amended claim 7 claims novel physical features not shown in the cited reference.
- i. The applicant's claim 9 claims that the apparatus forms a novel box-shape. Gilb's apparatus does not form a box shape. Therefore, the applicant's amended claim 7 claims novel physical features not shown in the cited reference.
- j. The applicant's claims 15-19 claim an adjustable invention to fit on rafters spaced different distances apart. Gilb's apparatus appears to only be adjustable to different rafter slopes. Therefore, the applicant's amended claims 15-19 claims novel physical features not shown in the cited reference.
- k. The results achieved by the present invention are new, unexpected, superior, and unsuggested. Prior to the applicant's frieze plate, no one had successfully tied adjacent rafters together and to the top plate, outside sheathing, and roof sheathing; or formed an I-beam section next to a rafter. During a hurricane or earthquake, the present invention will help hold the roof to the walls, and turn the outside wall into a strong shear wall.
- l. The problem solved by the invention was recognized, but never remedied. Previously, engineers and inventors designed hurricane ties against uplift of a rafter, and to be hidden under sheathing or wall board. That is why prior art hurricane ties were patterned after thin angle iron. Ongoing studies of wind forces on buildings show that wind and pressure subject a home to forces from several directions at once. Positive pressure on one side of a building and negative pressure on the other. Uplift pressure on one side of a building and down-force on the other. In the Tropics, where hurricanes are common, engineers never designed for snow load, but there can be tremendous down-loading forces on a building during strong winds. The present invention helps deflect these forces by providing a strong connection between adjacent rafters, top plate, roof sheathing, and outside wall sheathing. The solving of an ongoing problem militates in favor of patentability.
- m. Sheet metal connectors are not commercially accepted unless they are demonstrably superior to toe-nailing and are cheaper, stronger, and easier to install than previous sheet

metal connectors. The applicant's invention is demonstrably superior to toe-nailing; and stronger, cheaper, and quicker to install than previous metal connectors that can only be adjusted to different rafter slope like Gilb.

- n. For all the reasons given previously, applicant respectfully submits that the amended claims comply with Section 112. The amended claims cite novel features that define over the cited reference under Sections 102 and 103 because the present invention and cited reference have been shown to be completely different in layout, form, strength, installation, operation, and usefulness. Important differences in the applicant's drawings and specification have been inserted in the claims. The claimed distinctions are of patentable merit under Sections 102 and 103 because of the novel and unobvious structure, the fact that it hasn't been previously implemented, and the tremendous results provided for a contractor and homeowner. Since the amended claims define distinctive structure that produces new and unexpected results as described above, applicant submits that such claims are clearly patentable.
- 6. **Claim rejections-35U.S.C. §103 re Jonett 5,370,577.** The applicant has amended claims 15-19 to clear all 112 and 103 rejections. No new material has been added. Many of the 103 comments relating to Jonett's apparatus have been stated in the previous 102 remarks for Jonett and don't require repeating here. The applicant will state in this section, new material relating to the adjustability of the two-piece frieze plate.
 - a. The applicant's horizontal face and extended lower face are designed to move horizontally on the adjustable frieze plate. Jonett's '577, by having thin vertical tabs 72, cannot be adjusted in the horizontal manner, as the tabs 72 will be skewed and miss their mark of being under the rafter. Therefore it would be unobvious to modify the apparatus of Jonett by having it adjustable in the horizontal dimension.
 - b. The applicant states in the specification (page 17, third line from the bottom) that the adjustable frieze plate can be retrofit on existing buildings. Jonett's apparatus could not be retrofit onto an existing building because his truss webs 46 are on top of the rafters. It would be impossible to fit them under an existing roof. Therefore having Jonett's apparatus adjustable in the horizontal dimension in order to fit on existing buildings would be impossible and unobvious.

- c. The latest catalog for the Simpson Strong Tie Company was checked for adjustable connectors. They are the leading manufacture of metal connectors, and of the hundreds of connectors they sell, only a few are adjustable. Of those, all are adjusted by bending. None of them are adjusted by sliding pieces together like the applicant's invention. Therefore if the experts in the field, having master skill in the art of metal connectors did not think of having an adjustable connector by sliding tracks, it could not be obvious to one having ordinary skill in the art to modify Jonett's apparatus.
- d. The applicant has previously shown how the frieze plate is physically different and vastly superior to Jonett's apparatus, and the applicant's amended claims clear all 102 and 103 objections. The applicant's adjustable frieze plate, including it's novel and unobvious adjustability, is also physically different, vastly superior, and unobvious to Jonett's apparatus.
- e. The results achieved by the present invention are new, unexpected, superior, and unsuggested. Prior to the applicant's adjustable frieze plate, no one had successfully tied adjacent rafters together and to the top plate, outside sheathing, and roof sheathing; formed an I-beam section next to a rafter, or formed and adjustable connector between such structural members using a sliding apparatus. During a hurricane or earthquake, the present invention will help hold the roof to the walls, and turn the outside wall into a strong shear wall.
- f. The problem solved by the adjustable invention was recognized, but never remedied. Previously, engineers and inventors designed any adjustable connectors to be bent, so that it could fit on different spaced structural members. The solving of an ongoing problem militates in favor of patentability.
- g. Sheet metal connectors are not commercially accepted unless they are demonstrably superior to toe-nailing and are cheaper, stronger, and easier to install than previous sheet metal connectors. The applicant's adjustable invention is demonstrably superior to toe-nailing; and stronger, cheaper, and quicker to install than previous metal connectors that had to be bent to fit on different spacings.
- h. For all the reasons given previously, applicant respectfully submits that the amended claims comply with Section 112. The amended claims cite novel features that define over



the cited reference under Sections 102 and 103 because the present invention and cited reference have been shown to be completely different in layout, form, strength, installation, operation, and usefulness. Important differences in the applicant's drawings and specification have been inserted in the claims. The claimed distinctions are of patentable merit under Sections 102 and 103 because of the novel and unobvious structure, the fact that it hasn't been previously implemented, and the tremendous results provided for a contractor and homeowner. Since the amended claims define distinctive structure that produces new and unexpected results as described above, applicant submits that such claims are clearly patentable.

- k. Accordingly, the applicant submits that this application is now in full condition for allowance, which action applicant respectfully solicits. If the examiner agrees but does not feel that the present claims are technically adequate, applicant respectfully requests that the examiner write acceptable claims pursuant to MPEP 707.07(j).

Very respectfully,

Thomas C. Thompson
92-543 Kokole Pl.
Makakilo, HI 96707
(808) 672-3107

7. **Certificate of mailing:**

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on Feb 16, 2001
(Date)

Printed name of person signing this certificate: /

Signature: Thomas C. Thompson